Contents

Section 17

Southeast Colorado River Basin

Water Conservation

17.1 INTRODUCTION

This section of the Southeast Colorado River Basin Plan provides a comprehensive assessment of water conservation programs, practices and policies for residential, commercial, industrial and agricultural water uses. Conservation has been a way of life for generations. When early settlers carried water from the creek or ditch to the house, they learned to appreciate the number of trips required each day. Shortages caused by population growth, droughts or system failures can be mitigated by conservation to meet priority demands.

Significant reductions in water use can be made when people understand the reasons to conserve. This is evidenced by the public willingness to reduce water use during times of drought. By learning the benefits of implementing long-term water conservation practices, people will be more likely to accept and support these programs when they are presented.

People in the Southeast Colorado River Basin have always been aware of the limited water supply and the cost of its development. Now is the time to consider the place of water conservation as a part of meeting future demands.

17.2 BACKGROUND

Whenever water is discussed, the term conservation will most likely be included; especially in the arid west. Water is a finite resource and the demands on its use and consumption are growing at unprecedented rates.

> You don't miss the water 'til the well goes dry. Conserve now to provide for the future.

Conservation can occur at any point during the supply, delivery and use process. One fact that needs to be understood is the difference between diversions and depletions. Diversions are the withdrawal of water from a supply source. Depletion is the water consumed at the point of use that will not return to the system for reuse. A diversion must be sufficient to deliver the required water to the point of use and also allow for any losses along the way. Most of the loss will return to users downstream or make its way to groundwater aquifers.

Water quality is important whether the use is for agricultural, municipal or industrial purposes. The highest quality water is needed for culinary supplies while lower quality water will be adequate for most other uses. Use of lower quality (secondary) water for lawn and garden irrigation will reduce the need for high quality culinary water and extend the existing supply.

The goal of a conservation measure may be aimed at reducing diversions, depletions or both. This applies to both agricultural and municipal and industrial water.

17.2.1 Municipal and Culinary Water

The total municipal and industrial (M&I) water use was 8,740 acre-feet in 1996. About 79 percent of the M&I water comes from groundwater, either wells or springs. At present, all of the surface water use is in San Juan County. As time goes on, a larger proportion will come from surface water supplies requiring treatment when needed to meet culinary standards.

If the population increases by the year 2020 as presently projected, seven communities will not be able to meet future demands with the delivery capacity of their existing systems. Moab will need to increase its present system capacity by 1,158 acre-feet. By 2020, they should still have an excess of over 2,500 acre-feet of water supply available. See Table 11-4 and Table 11-6.

Municipal water conservation will delay more construction

The basin's primary source of domestic and municipal drinking water is groundwater, mostly wells, with some systems obtaining their supplies from springs. Although the impact on local aquifers from increased pumpage is not known at this time, it is reasonable to expect there will be increased drawdown with more demand. As a result, the implementation of prudent water conservation measures by local water providers will lessen the impact on underlying aquifers and allow more judicial use of existing water supplies by a growing number of users. Projections made in this report do not include conservation.

Water rates may provide strong incentives to use municipal water more efficiently. Where data is available, current rates are shown in Table 17-1.

The average drinking water use from public community systems for Grand County is 263 gallons per capita per day (gpcd) and for San Juan County it is 162 gpcd, 185 gpcd excluding the Navajo Nation. The basin average is 206 gpcd, 61 gpcd less than the state-wide average of 267 gpcd.

Monticello residents have no financial incentive to use water efficiently. Although meters have been installed, they are not read and billings are made at a flat rate. Commercial firms face a relatively flat volume rate for each successive block of water, providing a mild incentive to use less. By promoting wise use, the Monticello water supply is adequate. Moab has the lowest base rate with mild incentives in the volume charges.

17.2.2 Agricultural Water

Agricultural water is mostly diverted from streams and reservoirs and conveyed to the cropland through canals and/or pipelines. There is also some use from groundwater. The systems used to convey the water can lose about 10 to 20 percent or more of the total flow. Additional water is lost when on-farm efficiencies are low. Where water supplies are from direct flow diversions, it is more difficult to make use of water saved by increased efficiency.

Farmers have been installing pipelines and sprinkler systems to replace flood irrigation methods, making the overall irrigation efficiency an estimated 50 percent in the Southeast Colorado River Basin. This is above average when compared to other areas around the state. On-farm irrigation efficiencies can be as high as 60 to 70 percent with sprinkler irrigation systems. The total water diverted for irrigation is 34,950 acre-feet of which 18,430 acre-feet are depleted.

Table 17-1
WATER RATES FOR SELECTED COMMUNITIES

City/Town	Per Capita (gpcd)	Base Rate ($)	Base Amount (gallons)	First Overage		Second Overage		Third Overage
				($)	(1,000 gal)	($)	(1,000 gal)	$/1,000 gal
Moab[a]	276	$5.50	2 ,000	0.44	2-10	0.60	all	
GW & SS Agency Residential Commercial	224	 0.50/1,000 1.00/1,000	 10,000 10,000	 .75/1,000 1.50/1,000	 10-15 all	1.25/1,000	all	
Blanding	204	15.20	5,000	0.63	5-20	0.83	21-30	1.04/31-50; 1.35 all
Bluff	180	20.00	5,000	0.60	5-10	0.80	10-25	0.95/25-50 1.15/+50
Monticello Residential Commercial	147	 18.00 13.00	 flat rate 5,000	 no meters 0.90	 all			

[a]Rates for residences and commercial establishments served outside city limits are twice these rates.

17.3 WATER CONSERVATION OPPORTUNITIES

Water use has changed from primarily agricultural and domestic purposes to include the broader spectrum of municipal and industrial demands. In order to provide an adequate water supply, comprehensive conservation programs must be implemented for all uses.

17.3.1 Municipal and Industrial Water

Water supplied to municipal buildings and facilities, residential housing developments, institutions, commercial and industrial businesses and office buildings is defined as municipal and industrial (M&I) use.

The ability of a municipal supplier to deliver water can be limited by two things; the supply available and the capacity of the delivery system. If the populations increase by the year 2020 as presently projected, seven communities will not be able to meet future demands because of inadequate system capacities although they have an adequate water supply (See Table 11-6). Moab will have the largest system deficiency of 1,158 acre-feet and Thompson Water Improvement District will be short 64 acre-feet. The other five community system inadequacies are minor.

By 2050, three communities will not have an adequate supply of water to meet the projected demand (See Table 11-4). These shortages are based on projected populations without savings from future conservation programs. Municipal and industrial water conservation measures are discussed below.

Residential Water - Residential uses include both indoor and outside water. The implementation of typical conservation programs for residential uses can potentially save between five and 50 percent of gross annual diversions. Residential indoor/outdoor use is typically 40 percent and 60 percent, respectively. The potential for significant water savings through conservation is generally more viable for outdoor uses.

Indoor water use can be reduced by replacing high flow fixtures in the home, replacing old water intensive appliances with newer and more efficient models, and by keeping existing plumbing in good repair. More specific, indoor water conservation measures include: conducting regular inspections of existing toilets, fixtures and plumbing; replacing old high-flow toilets with low flush units; installing low-flow showerheads; taking shorter showers; and minimizing flows when using kitchen garbage disposals and by washing all dishes and clothes in fully loaded machines.

Sprinklers can reduce water use

Irrigation water for residential or commercial landscaping is typically supplied by either culinary or secondary water systems. Although there are a number of municipalities that supply only culinary water to residential and commercial developments, secondary water should be used for outdoor uses whenever possible. The use of secondary instead of culinary water reduces the demand for high quality supplies and can save costs for most public systems. In addition, reuse of treated waste water where conditions are favorable can help augment secondary water supplies.

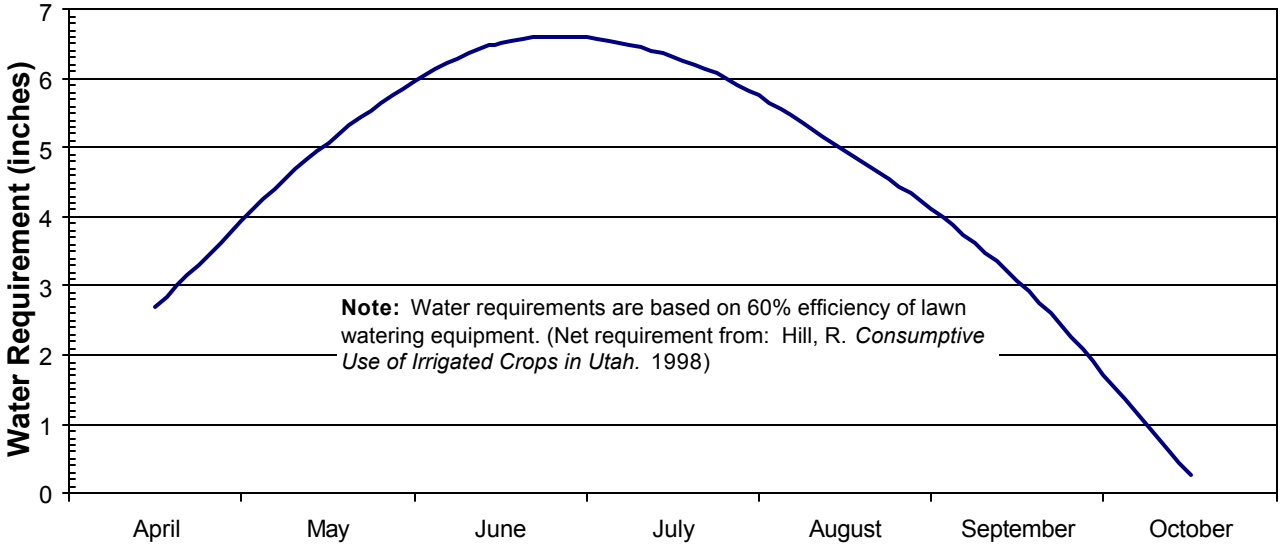
In many cases, the practice of flood irrigating lawns, gardens and shrubbery results in significant losses of water to deep percolation or infiltration into soil profiles beyond established root zones. Use of more efficient application methods such as sprinkler and drip irrigation systems should be considered for all residential and commercial landscape irrigation systems.

However, the use of a sprinkler system with an automatic timer can be very inefficient if it is not operated properly. Setting the timer system to meet summer requirements and allowing it to operate throughout the irrigation season applies water whether it is needed or not. The system should be adjusted to supply only the water needed as the year moves from spring to fall. A well managed system using a hose and sprinkler can be more efficient than a poorly operated sprinkler system with an automatic timer.

Figure 17-1 shows the irrigation water requirement for lawns in the Blanding area. As can be seen, the water needs in the spring and fall are about one-half the peak uses during the hotter summer months. If a timed system is set to meet the peak summer needs throughout the year, considerable water will be wasted early and late in the season. Timed systems need to be adjusted throughout the year to be the most efficient.

The total amount of water applied per irrigation depends on the time and rate of application. Most homeowners are not aware of actual consumptive use requirements and tend to over-irrigate on a regular basis. As a result, irrigation efficiencies are often low. The amount of water applied can be determined by placing small cans around the area being sprinkled and measuring the depth applied for a given time. Also, water applied between the hours of 6:00 p.m. and 10:00 a.m. will lose less to evaporation. Each irrigation should apply the depth of water needed to refill the root zone. In addition, staggering lawn watering days will reduce the demand on the community delivery system and can also save water. Deep, less frequent watering is better than light applications on a daily basis. Reducing over-watering of lawns, gardens and landscaping can save from 20 to 30 percent of the outside water use.

Figure 17-1
LAWN WATER REQUIREMENTS - Blanding



Consideration should also be given to replacing water intensive landscaping with water efficient landscapes. Utah State University Extension Service offices in Moab and Monticello have information on low water-using plants and vegetation to assist in developing xeriscaping schemes. The use of hardscapes can also reduce the amount of water needed. Hardscapes include decks, patios, walkways and play areas for children. Turf should be used in activity areas where its resilient nature can be utilized. However, because of its high water requirement, turf should not be used alone for an aesthetic ground cover but should be selectively interspersed with plants using less water. All landscapes should be designed so they can be easily maintained and efficiently irrigated.

Significant water conservation can also be achieved by eliminating or reducing the amount of water used to wash vehicles, driveways, sidewalks and exterior portions of the home. In times of drought, these types of outdoor water uses are the first subjected to water restrictions.

Other outdoor conservation measures include: 1) Inspection and repair of irrigation equipment; 2) use of brooms to clean driveways, sidewalks and patios; 3) elimination of continuously flowing water hoses when washing vehicles; 4) removal of handles from outside hose bibs when children are prone to leave water running; and 5) use of float valves for stock watering connections.

Education of the water-using public can help reduce the amount of water used. Reminders to adjust automatic sprinkler irrigation systems to apply only the amount needed can be included with water billings. Communities can also convert turf areas around city buildings into demonstration landscaped areas with a combination of grass, plants with moderate and low water use requirements and hardscaping.

Commercial Water - Commercial water uses are generally associated with small retail businesses such as grocery stores and gas stations. The largest commercial water users are restaurants, laundries, linen suppliers, motels, commercial office buildings and car washes. Conservation measures include water audits of existing distribution and handling systems, replacement of high volume fixtures with more efficient models, recycling where possible and the reduction of high-use landscaped areas.

Institutional Water Uses - This includes water for municipal and public recreational buildings and facilities such as schools, health care facilities, golf courses, athletic fields and major landscaped areas such as parks and cemeteries. Water consumption by these facilities generally accounts for 10 to 15 percent of all M&I uses.

An evaluation of water losses from municipal conveyance systems begins with an audit of existing pipelines, canals, ditches, and all related hydraulic structures and appurtenances. As field measurements have substantiated, leakage from pipes and open water distribution systems ranges from 5 to 20 percent. The lower limit (5 percent) is considered an acceptable level of system water loss. However, losses that approach the 20 percent range generally require an investigation of the existing distribution system and proposals for corrective action.

Water system audits effectively identify areas of excessive loss. These audits generally include: 1) An accounting of diversion and delivery records; 2) pressure testing of pipe systems; and 3) installation of groundwater observation wells to assess open channel seepage. System audits can assess overall distribution efficiencies, locate and determine severe losses and provide information to develop short-and long-term system rehabilitation and water conservation programs. Annual spot examinations can update results of previous audits.

Additional conservation measures include maintaining existing indoor and outdoor distribution systems, use of sprinkler and drip irrigation systems, and replacement of extensive landscaped areas with low-water-use shrubbery. Some areas can be graveled or hard surfaced to reduce water needs.

Irrigation of large grass areas such as parks, churches, cemeteries, and golf courses can be more efficient through the use of automated sprinkler systems with moisture probes and rain shutoff switches. Automated sprinkling systems can optimize the amount of water applied by continually monitoring actual consumptive use and by applying only the water needed during the evening and early morning hours.

Moab Golf Course

Industrial Water - Each industrial facility usually has its own unique water use and water-related in-plant processes requiring a case-by-case assessment to determine effective water conservation practices. However, many of the standard water conservation measures applicable to commercial businesses can also be applied to heavy industry. The most effective of these includes comprehensive audits of process water requirements and existing water supply systems. Water is a part of their operating expenditures and as such, it is a good practice to reduce this cost as much as possible.

17.3.2 Agricultural Water

Crop production uses the largest amount of water and therefore has the greatest potential for conservation. Although irrigated agriculture has shown some signs of decline, current estimates indicate this use still accounts for 34,950 acre-feet of total annual diversions. The use of storage reservoirs for irrigation water allows more efficient use by extending the available supply for use in the late part of the growing season or as holdover for the following year. Although farmers have been installing pipelines and sprinkler systems to replace flood irrigation methods, there is still room for improvement.

Agricultural water conservation measures are evaluated from two standpoints. First, to consider the overall conveyance of water supplies from the source to individual farms, and second, to evaluate on-farm methods of applying irrigation water to crops.

Agricultural Water Conveyance Systems - Agricultural distribution systems provide water for farms and ranches as well as for other uses such as lawn and garden watering inside communities. The delivery efficiency of these systems will vary depending on whether it is conveyed in an earth canal or a pipeline. Many of the irrigation systems have installed pipelines to deliver water to the individual users. However, there are still systems where the delivery efficiency could be improved by upgrading the method of conveyance. In addition, using pipelines provides the opportunity to install more efficient on-farm irrigation methods.

Agricultural On-Farm Irrigation Practices - In recent years, many traditional flood irrigation systems have been converted to sprinklers, borders and gated pipe. These practices have allowed on-farm irrigation efficiencies of 60 to 70 percent for sprinklers and up to 90 percent for level borders. Gated pipe system efficiency will vary from 40 to 90 percent depending on whether irrigation is corrugation, furrow or border methods. Irrigation efficiencies can be improved by optimizing the operation and layout of existing sprinkler or flood irrigation practices. Irrigation scheduling can help maximize the use of the available water supply. In all cases, the farmer needs to schedule an irrigation to refill the root zone before the crop goes into stress. However, this requires the water to be available "on call."

17.3.3 Wastewater Reuse

Effluent from wastewater treatment facilities represents a significant source of secondary irrigation water. Existing wastewater treatment facilities at Blanding, Moab and Monticello could potentially be a source of secondary irrigation water to local parks, cemeteries, golf courses, and other isolated landscaped areas. Blanding now uses effluent in sprinkler irrigation systems for agricultural uses. Moab has filed for permission to use effluent and Monticello has it under consideration.

Utilizing treated wastewater as a source of secondary irrigation water allows a more efficient use of the overall water supply by freeing up substantial volumes of higher quality water for culinary uses. The potential for wastewater use as irrigation water should be investigated to determine the criteria, requirements, and costs to install pumping stations and upgrade treatment and distribution systems from each of the existing treatment facilities.

Although the use of wastewater effluent for secondary irrigation is an efficient use of the overall water supply, the practice is limited and subject to stringent regulations by both state and federal health regulations. Current regulations prohibit the use of treated wastewater where it would result in direct human contact, either by aerosols generated from sprinkler discharges or by ingestion of foods irrigated with wastewater effluent. However, state and federal regulations do allow treated wastewater effluent to be used as irrigation water as long as the required conditions are met regarding human contact.

17.3.4 Water Conservation Advisory Board

The October 1995 publication entitled Water Conservation Recommendations by the Utah Water Conservation Advisory Board offers a number of programs and means to effectively conserve a substantial percentage of M&I water. These recommendations include: 1) Development of water management and conservation plans by major water provider agencies; 2) reduction of secondary water by replacing high water-consuming landscaping with xeriscaping or landscaping with reduced water needs; 3) better overall management of water intensive businesses and large conveyance systems; 4) implementation of water pricing measures/policies; and, 5) use of low-flow water fixtures in new residential homes and commercial buildings.

17.4 ISSUES AND RECOMMENDATIONS

There is considerable growth in some areas which makes conservation an important component of the plans for meeting future needs. Two policy issues are discussed below.

17.4.1 Community Water Management and Conservation Plans

Issue - Every community should have plans for meeting future growth demands.

Discussion - Developing additional sources of water for residential use is costly. Conserving high quality water sources to serve portions of future growth will be increasingly competitive with the development of new supplies.

The 1997 and 1998 Water Conservation Plan Act requires all conservancy districts and water retailers serving over 500 residents to prepare water conservation plans. An updated plan must be submitted every five years. To receive funding from the Board of Water Resources, Drinking Water Board or Water Quality Board, a community must have a current water conservation plan. At the present time, four community systems and suppliers have submitted conservation plans and one has not.

Water suppliers need to identify conservation goals in relation to supplies and demands. Alternatives to provide water to meet projected demands should be identified. The Division of Water Resources has recently completed an inventory of present supplies, system capacities and has estimated projected demands. Refer to

Section 11 for data on these items. This can be the basis for preparing a water supply and use plan with conservation as an important component. The plan should also look at including fringe areas in the public water system service area. This will reduce the need for additional domestic wells.

In addition to efforts by the Division of Water Resources, San Juan County completed a water development and use master plan that includes information on water conservation at the local level. Samples of conservation plans can be obtained from the Division of Water Resources.

Recommendations - Water management and conservation plans should be developed by the public water suppliers who have not complied with the 1998 Water Conservation Plan Act.

17.4.2 Water Pricing

Issue - Public water supplier rate schedules can be used to conserve water use.

Discussion - A pricing strategy may be among the most powerful conservation tools at a water utility's disposal. Cities and water districts are finding certain rate schedules can help modify customer water use and meet conservation goals. Those responsible for maintenance of large areas of turf should be billed for the cost of water, even if it is the municipality. This would bring about recognition of the cost.

Conservation rate structures should have the following characteristics:

Equity - Each customer group will be treated the same. Each customer group may be assigned a goal which defines the upper limit of efficient water use. For residential customers, the goal is based on the number of people per household served and outdoor water needs.

Revenue Stability - This will avoid the decrease in revenue that traditionally accompanies conservation actions by customers. To avoid the rise and fall of revenues, 100 percent of the fixed cost may be recovered with a base service charge. Charges for water used over the base amount are calculated separately. With all fixed costs covered by the service fee, revenues during droughts and periods of wet weather are adequate.

Credibility - The rate structure should be based on defensible information that is logical, simple and is credible in the eye of the customer. Credibility is also gained by providing customers data on water needs based on lot size, continuous customer education about the rates, incentives, penalties and the need for water efficiency.

Building a Conservation Ethic - Conservation practiced now can delay expensive new water investments in the short term and reduce chronic shortages in the future. Through continuing education, customers generally understand that wasted water is expensive water. The combination of an equitable, logical and credible rate structure with price incentives to achieve goals, starts the process of building a long-term water conservation ethic.

The introduction of a conservation rate structure may increase phone calls and visits from customers. Customer calls can provide valuable information and opportunities to explain how landscape watering or indoor water-use practices can conserve water.

The impact of a well thought-out conservation rate structure may save up to 15 percent for residential water users in general and up to 45 percent for landscape irrigation. Charging increased rates for high water use will generate revenues for other conservation programs. Therefore, pricing strategies can serve as both a conservation measure and a financial tool.

Setting water prices to encourage more efficient use requires consideration of several principles. They are as follows:

- **Conservation rate structures encourage lower water use without causing a shortfall in revenues.** To avoid revenue shortages, the rate schedule should include a base charge for all customers to cover all fixed costs. These are costs that do not vary regardless of water use.

- **Conservation rate structures produce excess revenue from overage charges.** To cover the variable costs with the amount of water delivered, an overage charge would be made for water delivered in addition to the base volume allowed. Part of the overage charge could include a conservation overage charge. This revenue would be used to encourage and pay for conservation programs.

- **Conservation rate structures identify waste, reward efficient use and penalize excessive use.** Communities with sophisticated billing equipment and adequate staff can develop a target use for each customer. The target would be based on the weather, landscaped area and other pertinent use factors. With a bill showing the excess or efficient use and rates charged, the customer will be able to make choices on water uses.

- **Conservation rate structures are supported by staff who can respond to customer calls.** When customers request assistance on reducing their water use, staff should respond by providing information or giving on-site assistance. This can also include water audits for large users.

Water rates can be structured in several ways to accomplish the desired goals. Three examples are given in the following tables. Two show commonly used rate structures and one is new to Utah.

A Flat Rate is easy to administer and understand. There is a base charge every month regardless of water use. In addition, all metered water use is charged at a flat rate or commodity charge. This is shown in Table 17-2.

The Increasing Block Rate is more complex but simple to administer if computers are used for billing. Table 17-3 shows how this rate structure works.

Another advantage is both the flat and increasing block rates can be constructed to encourage efficient water use without causing a shortfall in revenue. This is done by having the base charge set to cover fixed costs and the commodity or overage charge set to cover variable costs.

The Ascending Block Rate is more complex. It uses a water use target for each customer based on the individual situation. An example is given in Table 17-4. ❑

Table 17-2
FLAT RATE

Month	Usage (kgals)	Base Charge ($)	Commodity Charge ($1.10/kgal)	Total ($)
Jan	5	10.00	5.50	15.50
Feb	6	10.00	6.60	16.60
Mar	9	10.00	9.90	19.90
Apr	13	10.00	14.30	24.30
May	38	10.00	41.80	51.80
Jun	48	10.00	52.80	62.80
Jul	53	10.00	58.30	68.30
Aug	48	10.00	52.80	62.80
Sep	29	10.00	31.90	41.90
Oct	13	10.00	14.30	24.30
Nov	9	10.00	9.90	19.90
Dec	6	10.00	6.60	16.60
TOTALS	**277**	**120.00**	**304.70**	**424.70**

Table 17-3
INCREASING BLOCK RATE

Month	Usage (1,000 gal)	Base Charge ($)	Commodity Charge 0 to 10[a] $0.90	Overage Charge 10 to 20[a] $1.00	Over 20[a] $1.25	Total ($)
Jan	5	10.00	4.50			14.50
Feb	6	10.00	5.40			15.40
Mar	9	10.00	8.10			18.10
Apr	13	10.00	9.00	3.00		23.00
May	38	10.00	9.00	10.00	22.50	51.50
Jun	48	10.00	9.00	10.00	35.00	64.00
Jul	53	10.00	9.00	10.00	41.25	70.25
Aug	48	10.00	9.00	10.00	35.00	64.00
Sep	29	10.00	9.00	10.00	11.25	40.25
Oct	13	10.00	9.00	3.00		22.00
Nov	9	10.00	8.10			18.10
Dec	6	10.00	5.40			15.40
TOTALS	**277**	**120.00**	**94.50**	**56.00**	**145.00**	**415.50**

[a] Gallons are in 1,000s.

Table 17-4
ASCENDING BLOCK

Month	Usage (1,000 gal)	Base Chg. ($)	Target use (1,000 gal)	Et. ac-in [1]	Discount @ $0.83 [2]	Conserve Base @ $1.10 [3]	Ineff. Use @ $2.20 [4]	Wasteful Use @ $4.40 [5]	Irres. Use @ $8.80 [6]	Total
Jan	5	10.00	11.25	0	4.13					14.13
Feb	6	10.00	11.25	0						16.60
Mar	9	10.00	11.25	0						19.90
Apr	13	10.00	26.00	4						24.30
May	38	10.00	35.84	6.67		41.80				51.80
Jun	48	10.00	41.85	8.30		46.04	13.52			69.56
Jul	53	10.00	46.17	9.20		49.69	17.22			76.91
Aug	48	10.00	41.85	8.30		46.04	13.52			69.56
Sep	29	10.00	29.69	5		31.90				41.90
Oct	13	10.00	26.00	4		14.30				24.30
Nov	9	10.00	11.25	0		9.90				19.90
Dec	6	10.00	11.25	0		6.60				16.60
TOTALS	**277**	**120.00**	**302.66**	**45.47**	**4.13**	**277.07**	**44.26**			**445.46**

Days in Billing Period = 30 Application Efficiency = 0.65 Indoor Use = 100 gcd Irrigated Area = 0.21 ac. Family Size = 5

[1] Evapotranspiration in Acre-Inches

[2] Discount for using less than 50% of target. Price is 75% of base price.

[3] Base price charged for all water used between 50% and 100% of target.

[4] First penality charged for water used 101% to 150% over target.

[5] Second penality charged for water use 151% to 200% over target.

[6] Third penality charged for water use. All water used beyond 201% of target.